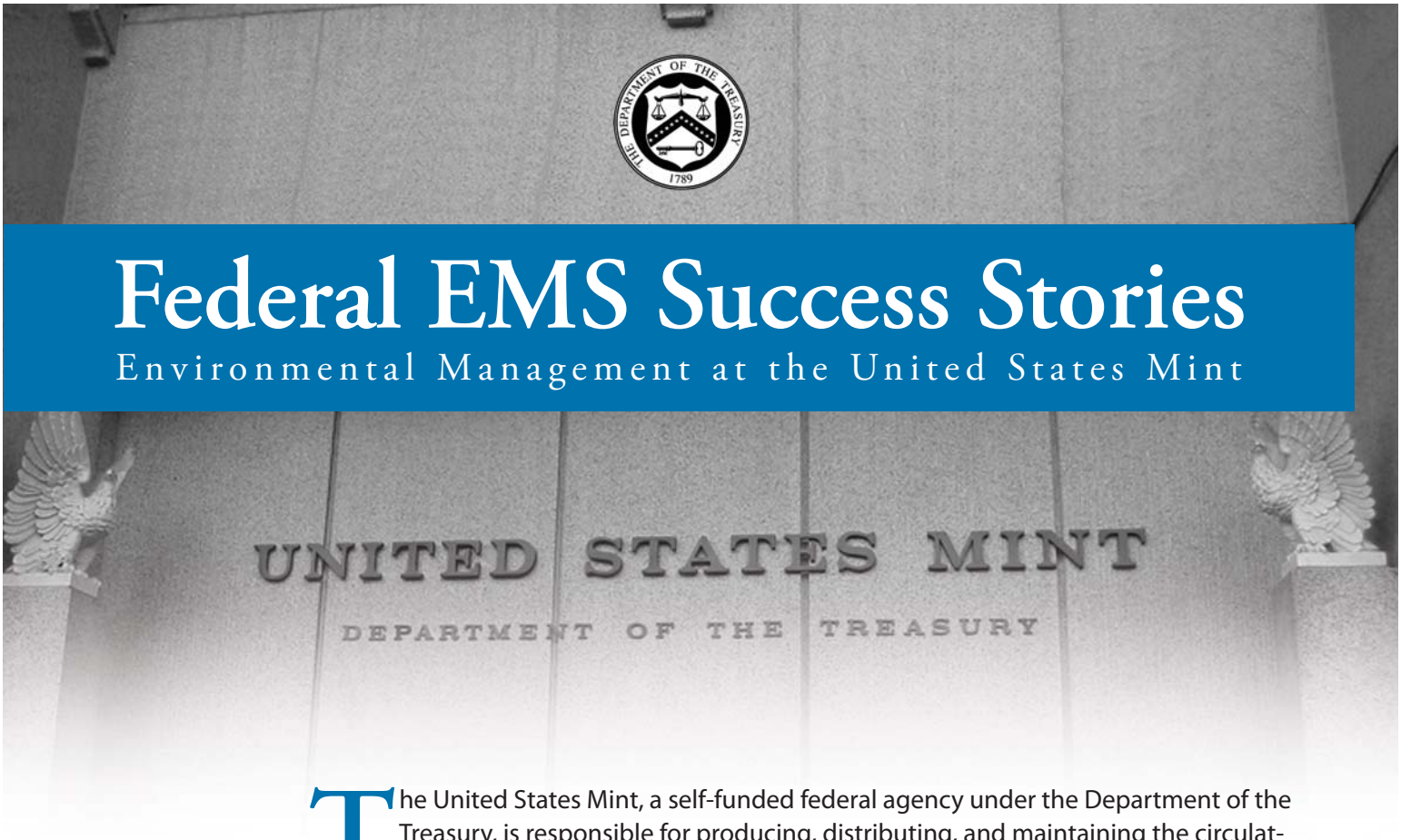


Federal EMS Success Stories

Environmental Management at the United States Mint

The United States Mint, a self-funded federal agency under the Department of the Treasury, is responsible for producing, distributing, and maintaining the circulating coinage for U.S. trade and commerce. To sustain its annual operating budget, the Mint relies heavily on revenue from sales of rare and commemorative coins and medals. In all operations, the United States Mint strives to apply "world-class business practices in making, selling, and protecting our Nation's coinage and assets." Any funded program must therefore demonstrate an ability to enable and advance the Mint's mission, and more specifically, an ability to enhance profit and revenue.

In manufacturing and distributing 11 billion to 20 billion coins per year, the United States Mint realized it had a responsibility to understand and manage its impact on the environment. However, when an environmental management system (EMS) was first proposed for the United States Mint in 1997, the common initial reaction was one of skepticism. Justifying implementation costs became a key obstacle. Ultimately, after analyzing both costs and benefits, the Mint decided that implementing an EMS was essential to demonstrate and solidify its overall commitment to environmental stewardship in achieving its mission. "We at the United States Mint believe that being environmentally responsible is not only an obligation we have to the public but also a practice that makes good business sense," said United States Mint Acting Director David A. Lebryk. The business decision to install an EMS, reinforced later with the signing of Executive Order (E.O.) 13148 "Greening the Government through Leadership in Environmental Management" in 2000, resulted in award-winning EMS programs at the United States Mint facilities.

Developing EMS Guidance at Headquarters

In 1997, the decision to develop an EMS for the United States Mint spurred organization of a formal environmental program, including the appointment of an environmental manager at Headquarters and development of an Environmental Management System Reference Manual in 1997-1998. The environmental manager used the manual for general guidance on installing EMS across the United States Mint's major facilities.

Subsequently, Environmental Managers were appointed at each of the United States Mint's four major plants in West Point (New York), Denver, Philadelphia, and San Francisco. EMS managers at each plant worked closely with Headquarters to integrate existing environmental compliance programs (e.g., state or federal regulatory requirements) and develop pollution prevention and waste management initiatives as part of facility-specific EMS implementation plans. In 1999 and 2000, the United States Mint commissioned third-party audits of each of the four facilities to determine baseline performance and identify key areas to address.

Taking EMS Beyond Compliance

In 2000, President Clinton signed E.O. 13148, which led to intensified efforts to install an EMS at the United States Mint by the December 31, 2005 deadline. Having already initiated EMS programs at each of its facilities, the United States Mint chose to integrate ongoing efforts according to a framework based on the International Organization for Standardization's ISO 14001 standard for environmental management.

As part of this integration effort, the United States Mint developed a new Environmental Management System Reference Manual based on the 17 key elements articulated in ISO 14001 to guide facility-specific EMS implementation plans. Additionally, each facility developed unique monthly self-inspection checklists and training programs to build awareness of EMS roles and responsibilities.

To further demonstrate its environmental commitment to both domestic and international customers, United States Mint decided in 2002 to pursue formal ISO 14001 certification for each of its four major plants. By taking this additional step, not required by E.O. 13148, the United States Mint confirmed its commitment to "world-class business practices" and responsible environmental stewardship. To date, three of the United States Mint's four production plants have achieved ISO 14001 certification, and the impacts of EMS implementation have been tremendous.

Early EMS Success at West Point

Milestone	Date
Final EMS implementation audit	January 2005
ISO 14001 (1996) registration audit	March 2005
ISO 14001 (1996) certification	March 18, 2005
Surveillance audit to update certification to ISO 14001 (2004)	September 2005

The United States Mint at West Point was the first Mint facility to achieve ISO 14001 certification, the culmination of several years of committed effort to enhance environmental performance at the plant. In 2000, as part of preparations for EMS implementation, the West Point facility initiated extensive building upgrades and renovations. It installed new energy-efficient lighting systems and occupancy sensors to reduce energy consumption. The West Point Mint also removed all asbestos and lead-based paints and installed a new heating, ventilation, and air conditioning system.

Recycling and waste management has been a major focus of the West Point Mint EMS. Since 2004, the West Point Mint estimates it has recycled 95 percent to 100 percent of all cardboard, batteries, food and beverage containers, and fluorescent light bulbs. The West Point Mint also recycles all scrap metal and has implemented an e-waste management program to recycle all computers and approximately 95 percent of all expired printer and toner cartridges.

United States Mint at West Point

The plant's EMS resulted in significant process changes that reduced environmental impacts. For example, the West Point Mint revised its standard polishing, rinsing, and drying operations to minimize water use, reducing water consumption by 70 percent. Also, security forces at the West Point Mint have converted to lead-free ammunition, minimizing soil contamination from expired rounds at the onsite firing range.

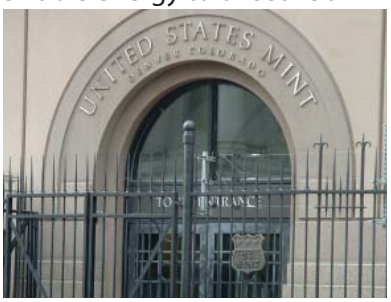
Enhanced Waste Management in Denver

Milestone	Date
Final EMS implementation audit	January 2005
ISO 14001 (1996) registration audit	April 2005
ISO 14001 (1996) certification	April 27, 2005
Surveillance audit to update certification to ISO 14001 (2004)	October 2005

The United States Mint at Denver was the agency's second production plant to achieve ISO certification and many of the impacts of its EMS were similar to those at the West

Point Mint. Police converted to lead-free ammunition to reduce soil contamination at the firearm training range and the facility expanded recycling and waste management efforts. The Denver Mint recycled an estimated 12 tons of paper/cardboard and 270 tons of scrap metal in fiscal year (FY) 2005. The Denver Mint also improved the efficiency of its coining press to reduce oil consumption by 80 percent in FY 2004 compared to FY 2000.

In 2002, the facility created a hazardous materials pharmacy as a means of centrally managing chemicals needed for manufacturing processes. The following year, the Denver Mint began purchasing 1.2 million kilowatt hours per year of wind power, equivalent to approximately 10 percent of its annual energy use and enough renewable energy to offset 750 metric tons of carbon dioxide each year.



United States Mint at Denver

The Denver Mint EMS continues to drive environmental performance improvements. The facility is currently working towards finalizing a closed-loop industrial wastewater pretreatment process. New equipment upgrades, expected to be operational by late 2006, will complement earlier improvements to the secondary containment system and general system maintenance.

EMS-Driven Process Changes in Philadelphia

Milestone	Date
Final EMS implementation audit	April 2005
ISO 14001 (1996) registration audit	June 2005
ISO 14001 (1996) certification	June 15, 2005
Surveillance audit to update certification to ISO 14001 (2004)	December 2005

The United States Mint at Philadelphia, the agency's third production plant to achieve ISO certification, became the first federal facility to be registered with both ISO 14001 and the Occupational Safety and Health Administration's Voluntary Protection Program. Process changes resulting from the Philadelphia Mint's EMS indeed reflect a commitment to minimizing environmental impacts and protecting human health.

A new database has allowed the Philadelphia Mint to more carefully manage chemicals and has substantially reduced hazardous waste at the facility. The database maintains lists, locations, and descriptions of chemicals, and also provides links to the appropriate material safety data sheets. With this increased focus on management, the facility has reduced annual hazardous waste generation from approximately 50,000 pounds to an average of 4,700 pounds, a decrease of more than 90 percent.

EMS-driven upgrades and changes to standard operating procedures have minimized hazardous air and water emissions. Installation of a state-of-the-art chrome scrubber system has significantly reduced chrome emissions and new catalytic oxidizers have dramatically reduced carbon monoxide emissions.

The Philadelphia Mint's new wastewater treatment process, employing a new organic polymer to remove metals, reduces concentrations of copper, nickel, and zinc to 20 percent of the permitted limit. The new process also reduced the amount of solid waste generated from wastewater treatment by 85 percent. Subsequent savings on land disposal costs have offset additional costs for the organic polymer. The facility also employed a new resin-based treatment to reduce concentrations of silver.

United States Mint at Philadelphia

Expanding and Improving EMS at the United States Mint

In June 2006, the Office of the Federal Environmental Executive recognized successful EMS implementation at these three United States Mint facilities by honoring the United States Mint with the prestigious White House Closing the Circle Award for Environmental Management. This award created additional awareness, interest, and support for EMS among United States Mint employees and management. "The White House Closing the Circle Award for Environmental Management recognizes our hard work and commitment in sustaining a high level of environmental stewardship," said United States Mint Acting Director Lebryk.

The United States Mint is currently in the process of implementing an EMS at the United States Mint at San Francisco, applying lessons learned from the other production plants' successes in chemical and waste management, emission reductions, and wastewater treatment. The San Francisco Mint is well on its way to ISO 14001 certification, having installed a chrome scrubber system (similar to that at the Philadelphia Mint) and completed several other system improvements to minimize environmental impacts. Registration under the ISO 14001 (2004) standard is expected by the end of 2006.

Following ISO certification, the focus shifts toward continuous improvement. Monthly self-inspections maintain a strong, functioning EMS, and third-party audits (conducted every three years) verify that the systems are operating efficiently and effectively. These programs and procedures have become an integral part of operations at the United States Mint. With ISO 14001-registered facilities, the United States Mint not only demonstrates its commitment to environmental stewardship, but advances its primary mission by enhancing efficiency to improve business performance.